

## **SYSTEM FOR BROADCASTING ADVERTISEMENTS**

### **Field of the Invention**

The invention relates to the electronic capture, analysis and delivery of mass media and consumer information and in particular to a system of broadcasting advertisements.

### **Background to the Invention**

Present mass media advertising models assign particular areas of interest to certain classes of consumers based on available demographic information. From this starting point mechanisms are developed to deliver the advertising content to as many potential consumers as possible whether:

- Over the air (radio stations);
- Via television (television networks);
- Via cable and/or satellite transmission; or by
- Mass distribution of printed copies (newspapers and magazines)

The main drawback with this approach is the lack of commercial efficiency in the existing models. Without reliable profiling demographic data on audiences and/or subscribers, individualisation and personalised targeting remains a tough challenge for the whole advertising industry. A too narrowly focused

advertising campaign runs the risk of missing potential consumers and a too broadly focused campaign runs the risk of not attracting enough consumers as it may not be appealing enough.

5 Advertisers have always attempted to use targeting methodologies – direct mailing is one obvious example – to better identify and reach potential prospects or specific classification groups of purchasers. This has always been difficult in television where the underlying premise of broadcasting – one to many – has always prevailed. The attempts to match viewers to advertised products rely on assumptions about stereotypes rather than specific analysis and interpretations of individual consumer viewing patterns.

10 This absence of accurate prospect profiling data particularly in the TV medium means that identifying leveraging and retaining product responsive television audiences remains a largely unachieved priority for the advertising industry. This dilemma for television is made even more significant by advances in technology that increase the overall number of channel mix options available to the advertising campaign strategist i.e. message delivery at the touch of a button direct to a mobile phone.

20 Individuals at home, work or on the move now come into contact with an ever expanding number of different forms of mass media. Recent additions to the established and traditional options include:

- 25
- Broadband;
  - Digital television;
  - Digital radio;
  - Webcasting;
  - Internet audio streams; and
  - 30 ▪ Internet video streams.

The problem therefore is that:

- 5           ▪ Advertisers globally would prefer to accurately target individual consumers based on an improved understanding of their propensity to purchase particular types of product and in order to maximise the overall effectiveness of their industry;
- 10           ▪ Consumers would prefer to receive advertisements relating to products of personal interest rather than campaigns which have no relevance.
- At present there is no way of electronically matching the viewer to the playout material;
- 15           ▪ Broadcasters need to capture accurate programme ratings and channel market share data since this forms a valuable currency for their industry. At present there is neither net-centric nor automated option for carrying out this type of measurement.

20           An objective of the present invention is to provide a system which addresses these problems.

### Summary of the Invention

25           In its broadest aspect, the invention provides a system for, broadcasting inter-programme and/or intra-programme advertisements to a viewing or listening audience, characterised in that the system comprises:

- means for obtaining real audience profiles;
- means for matching a given advertisement's target audience profile to said real audience profile; and
- 30           - means for dictating not only that certain advertisements shall be broadcast only between and/or during certain programmes but also that certain individual members of, or groups of members within, the programme-receiving audience may receive one advertisement, during and/or between certain programmes, whilst other audience members or member groups

receive a different advertisement, in one or more of the same respective advert 'slots', whilst watching or listening to the same broadcast.

5 This concept may be applied to a wide range of implementations including cable, terrestrial, satellite networks and future systems such as those embodying broadband television technologies.

10 Such an arrangement largely overcomes (or at least mitigates) the drawbacks previously listed with respect to known mass media advertising models. In addition to the completely new design of an analysis tool and a database management engine the invention provides a software based link which brings both component parts of a complex value chain together and then automates

15 In a subsidiary aspect in accordance with the invention's broadest aspect, the system stores further information such as a program buyer profile, time of broadcast and/or nature of broadcast and utilises an interface between the real audience profiles data stored and said further information to select appropriate advertisements.

20 This optional feature would allow even better tailored advertisements to be broadcast on a network by combining the information that is already usually readily available with the viewing habits of individuals. This may also allow a broadcaster to automatically modify its viewer classification dependent in part

25 on criteria such as the nature of the program or the age of the program buyer. In other words, different classes of adverts may be sent to a particular television at different times. This would allow focused advertising despite several viewers viewing programs from the same television in sequence.

30 In a further subsidiary aspect, the system further comprises means allowing the viewer or listener to interact during an advertisement, means which store data as part of the audience profile to record any such interaction and means which may be set to trigger the release of further similarly classified advertisements to the viewer or listener in response to such interaction.

This optional feature allows fine tuning of the advertisement content sent to individuals. For example, if an individual interactively orders a brochure for a particular type of new motorcar, the system could store such data and send more adverts for similar or even the same motorcars to the viewer.

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In a further subsidiary aspect, during a given broadcast with a plurality of advertisement breaks, the system is adapted to record for an individual audience the series of advertisements delivered during an initial break and then adjust the content of the following series of advertisements delivered during a subsequent break.

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This would allow the system to deliver a tailored sequence of series of advertisements to the individual audience. It may for example choose a series of adverts which are best suited for the 1<sup>st</sup> 15 minutes of viewing even when a viewer joins the broadcast part way through. This will further improve the efficiency of the adverts delivered to individual audiences.

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In a further subsidiary aspect, where a given broadcast on a given channel has a plurality of advertisement breaks, the system is adapted to record for an individual audience whether the viewer switches to another channel during the break and the system comprises means to calculate which channel he or she is likely to switch to and tailor the advertisement delivered to said most probable channel to correspond to the audience in question.

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This system will allow the audience to be delivered the adverts even when they try to change channels to avoid them.

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In a further subsidiary aspect, the information identified such as the real audience profiles is stored remotely from the viewer/listener receiver units.

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This will do away with the requirement to have each receiver unit incorporate bespoke memory devices. The system may therefore rapidly be integrated to the existing broadcasting infrastructure.

### Brief Description of the Drawings

A preferred embodiment of the present invention will now be described by way of example and with reference to the accompanying drawing in which:

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Figure 1 shows a schematic representation of an operational system.

Figure 2 shows a block representation of a typical system architecture.

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Figure 3 shows an alternative block representing a typical system architecture.

Figure 4 shows a further alternative block representing a typical system architecture.

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### Detailed Description of the Invention

A system and method of linking consumers and advertising campaigns with the aim to provide individual targeted advertising is described.

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We (i.e. the general public) think we are unique individuals but we unconsciously reveal elements of our character in everything that we do – from what we watch, read, listen to, wear, and what we eat. When these are collected together a person's character can be analysed, assigned a 'type' and used to successfully determine a propensity to buy certain types of product.

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The system as defined by the present invention uses a viewing based analysis system (which may collate information as points) to obtain multiple layering of behavioural habits – the true secret of accurate targeting. Real live input feeds from continually refreshed mainstream broadcast sources are collated on an individual location basis via consumer specific IP addresses to form a centralised database which is used as an analysis platform (or in other words a management tool) to collate and develop these classification groupings. These subsequently form the basis and the main trigger for the automated playout of advertising material.



5 In operation, the service provider – who may either be a traditional broadcaster or a next generation video based ISP (Internet Service Provider) – transmits an interleaved data stream to a viewer / consumer. The incoming signal is decrypted and displayed as either an audio data stream, a video data stream, or a combined audio and video data stream on a variety of terminal devices.

The system may operate following these method steps:

- 10       ▪ Track and read the viewing habits of individual households in a given area;
- Capture this information either locally or remotely in a deep level network environment;
- 15       ▪ Analyse and assign subsequent captured data into classification groups;
- Create an output using this data which can be used as a decision tree to determine the suitability of particular individual households – via their classification group status – to receive particular types of advertising material according to that segmentation;
- 20       ▪ Separately classify all types of advertising by numerically tagging segments (abbreviated as NTS codes by the present applicant). These groupings will support the onward addressing of advertising material to appropriate target destinations;
- Use this output seamlessly within appropriate software to provide listings of household identifications via destination addressing which can be used to direct advertising material from those central servers out to potential prospects using the new NTS codes;
- 25       ▪ Co-ordinate the play out of advertising from centrally located broadcast servers out to end consumers using the outputs described. This will involve the manipulation and management of individual broadcast streams.
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Using television as an example medium a preferred embodiment of the present invention is will now be described.

An electrical signal of defined structure (interleaved audio and/or video data streams) is fed into households covered by a broadcasting network having at least one television viewing device which is able to detect, interpret and convert the data stream into a television picture containing programmes, trailers and advertisements.

A viewing profile is obtained as a result of analysing what is being watched on the television. Standard audience ratings are obtained by taking a snapshot of how many televisions are tuned into a certain channel at a certain instance in time – this only usefully tells you what channel is on not who might be watching it.

By interrogating a Set Top Box (STB) connected to the television and equipped with an individual IP address, a more accurate picture of the viewer can be built up over time and has the added feature that it is continually being updated.

Information such as the nature of the program may be utilised and the system may be equipped with an analysing interface set to identify that for individual addresses there are in fact a certain number of different viewers. The interface may identify that a particular household comprises a husband, a wife and a young child. This additional data may then be used to tailor the adverts to specific individuals during different periods throughout the day. The analysis of probabilities of who might be viewing a particular program may then be carried out. The system may even conclude that it is likely that all are watching a particular program and deliver the appropriate mix of adverts.

The system may be adapted to record any interaction of the viewer for those adverts with which a viewer interacts and to take into account the interaction to select future adverts to send to the user. Such information of interaction may also be stored and sent to the advertiser as proof of effectiveness of their adverts and the present inventive system.



The system may also be adapted to record viewer switching habits in order to deliver adverts at appropriate times to a secondary channel which may also correspond to the viewer's profile.

5 The system may also be adapted to measure the time the viewer has been receiving the broadcast and tailor the successive adverts' breaks in accordance.

10 STB's have unique electronic addresses which can be used to uniquely identify the television connected to the STB. As the viewing profile is formed the electronic address of the STB is its unique identifier. Substantially similar profiles are then grouped up into viewing clusters.

15 Advertising campaigns are categorised according to content and predetermined viewing profiles and reclassified by integrating Numerically Tagged Segment (NTS) codes into the bank of advertising campaigns pipelined for transmission.

20 NTS codes are associated with viewing clusters resulting in automatic play out of advertisements from broadcast networks matching adverts to suitable consumers. Consumer profiling is achieved across the broadcast network.

25 The broadcast capacity or bandwidth of the line or channel is effectively increased without the need of additional cables, connectors or the inevitable loss of service whilst such maintenance is being performed.

30 Broadcast networks provide a combination of multicast (traditional broadcasts) and unicast (Video on Demand - VOD) services. This system utilises a bridging protocol that supports multicast and unicast applications producing multicast application having unicast characteristics.

This protocol combined with an expiry mechanism achieves selective play-out from multiple video play-out. For any given advertisement slot multiple advertisements may be transmitted from the broadcast network but only those

with the inbuilt expiry mechanism disabled will play out at the target destination.

5 The expiry mechanism or TTL (Time to Live), if set at a value approaching zero, causes the advertisement that it is assigned to, to effectively die on arrival at the target destination, i.e. play-out. Only advertisements with higher TTL's are played out.

10 Whilst, for example, eight adverts may be transmitted for a three advert slot, only three adverts are played out at the target destination and the content of the play-out may be different from one target destination to another.

15 The target destination is specified by the STB electronic address. This overcomes any data protection legal issues as at no time are viewer's individual details (name, age, location, occupation etc) used in anything other than an aggregated capacity.

20 The arrangement described is applicable to any multimedia transmission system capable of reaching mass audiences.

25 The whole invention is particularly advantageous because it has the additional benefit of being able to deliver accurate programme rankings and channel market share information using network embedded technology. This can be used to supplement the outmoded and inefficient measurement techniques based on random probability sampling which have been used for the last thirty years. It is envisaged that the present system will eventually replace these prior art systems over time.

30 The present system may have particular applications in the 'Video on Demand' (VOD) market. In this context, the system may be adapted to select appropriate adverts to accompany personal broadcasts such a pay per view film.

Against this background, Figures 1, 2, 3 and 4, and incorporated text references, are generally self explanatory.

5 In Figure 2, an example of a system configuration is shown where part of the Zap system is co-located with the Host's broadcast source network and another part is located elsewhere. Alternatively, the entire Zap system can be co-located within the Host's source network.

10 The Host's broadcast source network comprises optical drives, Web or Internet servers, exchange servers, video servers and configuration database housed in racks along with uninterrupted power supplies (UPS). These are standard network components and as such require no further explanation.

15 The Zap video server, a stand-alone server preloaded with the system software is integrated into the Host's broadcast network. All components are linked to be able to communication with each other.

20 Alongside the Zap video server are the facilities to monitor the data collection from the STB's. Typically, when the polling pulse is fired to the STB and a return pulse of consumer data is received, this is stored by a data collector machine and each data collector machine can monitor 25,000 STB's. This data is used to perform the consumer profiling and from this profile the actual play-out to each target destination (STB) is determined.

25 Figure 3 is a representation of the system wherein all of the Zap processes are located and performed within the broadcaster's or Host's source network at a single site.

30 In Figure 4, an alternative system configuration is shown. Here the interaction between the Zap server and the Host's network is clearly shown. The Bridge Group references relate to the bridging protocol, the content store is the complete set of advertisement, the ad server contains the tagged advertisements originally in the content store when untagged, CPE are consumer premises equipment and relate to individual households each having

a related STB or set top box, ATM or Asynchronise Transfer Mechanism refers to the main network of the broadcaster.

The scope of the invention is defined by the claims which now follow.